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Application No.: 10/091,710

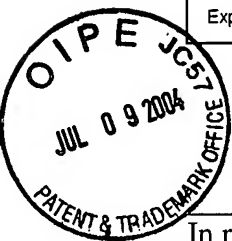
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Docket No.: 08055/000K324-US0

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Docket No.: 08055/000K324-US0
(PATENT)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Juei-Hua Lin

Application No.: 10/091,710

Art Unit: 1775

Filed: March 5, 2002

Examiner: Andrew T. PIZIALI

For: **ANTI-REFLECTIVE GLASS SURFACE
WITH IMPROVED CLEANABILITY**

APPEAL BRIEF

MAIL STOP Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Appellant submits this Appeal Brief in triplicate as required by 37 C.F.R. § 1.192. A Notice of Appeal was filed on December 9, 2003 in response to the Final Office Action mailed July 15, 2003. Appellant submits concurrently herewith the required fee for this Brief pursuant to 37 C.F.R. §§ 1.192 and 1.17(f). It is believed that no additional fees are required for this submission. However, should it be determined that additional fees are required or that any refund is due in connection with this application, the Commissioner is hereby authorized to charge the required fee(s) and/or credit the refund(s) due to Deposit Account No. 04-0100.

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SUMMARY OF THE INVENTION

As discussed in the Specification, on page 3, lines 6-28 and page 9 lines 27-28, the present invention provides a high clarity, low reflectivity glass having at least one glass surface including a plurality of primary raised and lowered surfaces extending across the surface of the glass. The islands have a density of about 60 to about 10,000 islands per square millimeter, and are about 10 to about 200 micrometers in diameter. The islands extend across the entire surface of the glass in such a distribution that they provide a decreased reflectance of incident light across the surface of the glass. The glass surface also includes a skeletized silica structure extending uniformly over the surface of the glass. The skeletized structure is about 100 to about 400 angstroms has openings of about 100 to about 200 angstroms in diameter uniformly distributed throughout. The density of the skeletized structure is about 50 to about 70 skeletal structures per 200 nanometers square of the glass surface. Further, the irregular micropore surface of the glass has a purplish-brown to brown color (when viewed in daylight).

ISSUES

The first issue is whether claims 1-3 and 31 should be rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,944,986 to Zuel (hereinafter the “986 patent”).

The second issue is whether claims 1-3 and 31 should be rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,120,605 to Zuel et al. (hereinafter the “605 patent”).

Appellant respectfully disagrees with the Examiner. The density of the skeletized structure is some of the novelty of the present invention. The surface structure claimed, "the density of said skeletized structure is about 50 to about 70 skeletized structures per 200 nanometers square of said surface", enhances the cleanability and color of the glass product. The structure of the presently claimed invention keeps grease at the surface, allowing a mild glass cleaner (approximately 3% active ingredient, e.g. WINDEX) to remove the grease from the glass surface. Prior art glass, as disclosed in the '986 and the '605 patents, tends to trap grease in the openings and require high strength cleaners (approximately 65% active ingredient).

The method and composition used to produce the glass product as disclosed in the '986 patent and the '605 patent differs from the method and composition of the present invention and cannot form the glass product as presently claimed. The method and composition used to form the glass product of the '986 and '605 patents results in a skeletized structure that has approximately half the density of the skeletized structure as claimed. Figure 11 in the '986, the '605 and the present Specification are identical and disclose the skeletized structure of the glass product of the '986 and the '605 patent. Figure 11 is to scale, as noted by the scale bar in the lower right hand corner of the photograph. The length of the scale bar equals 100 nm. Appellant submit hereto, as Exhibit B, a copy of the photograph of Figure 11. Exhibit B contains a square that is 200 nm x 200 nm, drawn to scale on the figure. The raised surfaces of the skeletized structure resemble white spheres in Figure 11. A count of the raised white spheres indicate only approximately 4 to 6 spheres per 200 nanometer length or a total of approximately 30 to 40 skeletized structures per 200 nanometers square. This density of the prior art glass is also disclosed on page 12, lines 24-25 of

the Specification. Thus, the prior art glass disclosed in the '986 and the '605 patent does not contain every element of the presently claimed invention and does not anticipate claims 1-3 and 31.

Additionally, the difference in structure is apparent from the color of the glass of the claimed invention as opposed to the prior art. The presently claimed glass is "a purplish-brown to brown color (when viewed in daylight)." Specification, page 9, lines 27-28. Both the '986 and the '605 patents disclose glass having "a purplish-blue to blue color (when viewed in daylight)." '986 patent, column 6, lines 53-54 and '605 patent, column 6, lines 26-27. The surface structure of the glass product determines the color of the glass. See, Specification, page 9, line 22 to page 10, line 5, '986 patent, column 6, lines 43-62, and '605 patent, column 6, lines 15-35. The color of AR etched glass is known in the art as a key element in determining the surface structure of the AR glass. Unetched glass differs in chemical composition by source and requires the potency of the AR etching solution to be modified for each lot. Color is used as the basis for determining the proper potency of the acid etching solution. Accordingly, a difference in the color of the glass is an indicator of a different method and structure of the AR etched glass. Thus, the method of the prior art cannot form the structure of the present invention.

Further, Appellant submits that the composition of the AR etching solutions used in the prior art and the present invention differ. The potency of AR etching solutions are changed by adding specific amounts of hydrofluoric acid or boric acid. The general range of etching potency is between plus 12 units or minus 12 units for both the prior art and the present invention. However, the exact potency of present invention is 2 units less than that of the prior art. Two units of potency, as known by those of ordinary skill in the AR etching arts, is a very large range. Two units of

potency can produce vastly differently properties in the etched glass, for example, the skelitized structure of the glass and the color of the glass, as distinguished above.

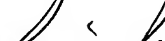
Thus, the physical properties (i.e. density and color) are significant features of the claimed invention that are not present or inherent in the '986 and the '605 patents. The physical properties of the glass are changed from the prior art due to the change in the skeletized structure as claimed. Thus, Appellant submits that the claims are not anticipated by the references and the above rejections be withdrawn or reversed.

CONCLUSION

For the foregoing reasons, the final rejection of claims 1-3 and 31 should be reconsidered by the Examiner or reversed in its entirety by the Board. Claims 1-3 and 31 are patentable over the prior art of record. Accordingly, the Examiner's finding of unpatentability should be reversed. Such a disposition is earnestly solicited.

Dated: July 9, 2004

Respectfully submitted,

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PENDING CLAIMS

Claim 1. A glass product comprising an alkali or alkali earth metal silicate glass, said glass product having high optical clarity and comprising at least one surface comprising:

a plurality of islands extending across said surface of said glass at a density of about 60 to about 10,000 islands per square millimeter and each island being between about 10 to about 200 micrometers in diameter and said islands extending across said entire surface of said glass in such a distribution that said islands contribute to providing decreased reflectance of incident light across said surface of said glass;

a skeletized silica structure having openings and extending uniformly over the surface of the glass, including the islands, said skeletized structure is about 100 to about 400 angstroms in diameter

said openings are about 100 to about 200 angstroms in diameter and uniformly distributed throughout the surface of the glass,

wherein the density of said skeletized structure is about 50 to about 70 skeletized structures per 200 nanometers square of said surface; and

the product having low reflectance of incident light.

Claim 2. The glass of claim 1, wherein said islands are disposed on said glass surface at a density of about 250 to about 600 islands per square millimeter of said glass surface.

Claim 3. The glass of claim 1, wherein said product comprises a plane sheet.

Claims 4-30 Withdrawn

Claim 31. A glass product comprising an alkali or alkali earth metal silicate glass, said glass product having high optical clarity and comprising at least one surface comprising:

a plurality of islands extending across said surface of said glass, each island being between about 10 to about 200 micrometers in diameter; and

said islands extending across said entire surface of said glass in such a distribution that said islands contribute to providing decreased reflectance of incident light across said surface of said glass,

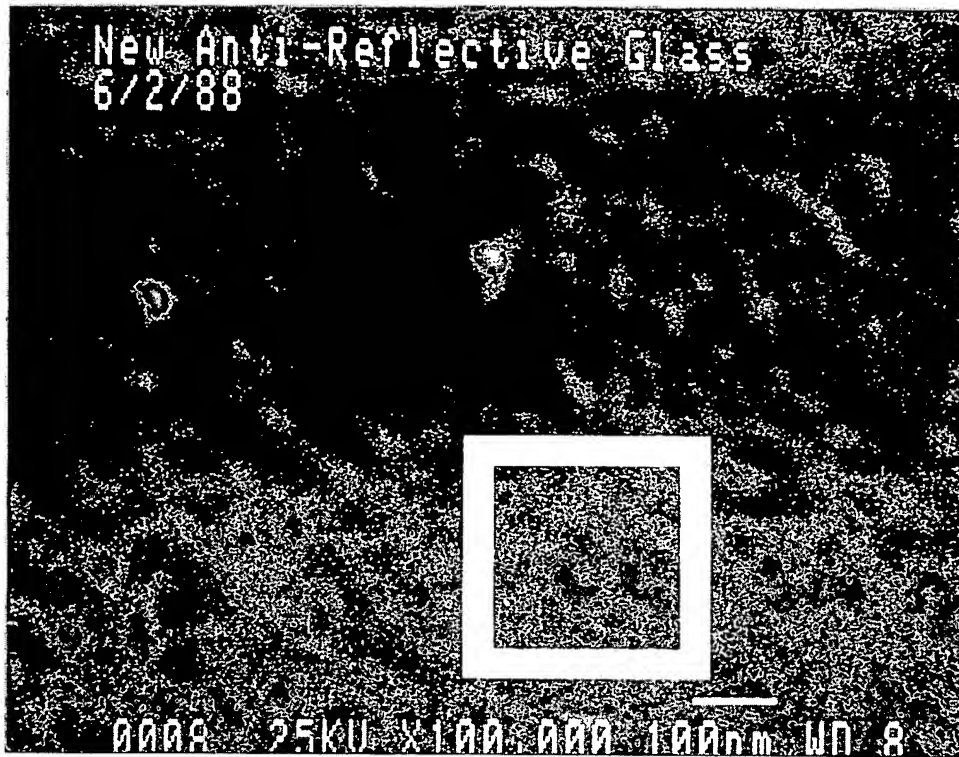
a skeletized silica structure having openings and extending uniformly over the surface of said glass, including said islands, said skeletized structure is about 100 to about 400 angstroms in diameter

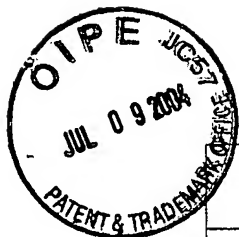
said openings are about 100 to about 200 angstroms in diameter and uniformly distributed throughout; and

said product having low reflectance of incident light.

Claim 32. Withdrawn

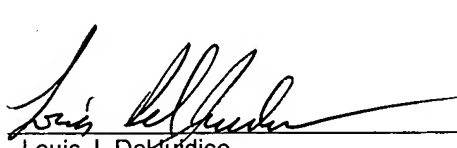
FIG. 11





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TRANSMITTAL OF APPEAL BRIEF			Docket No. 08055/000K324-US0
In re Application of: Juei-Hua Lin			
Application No. 10/091,710	Filing Date March 5, 2002	Examiner A. T. Piziali	Group Art Unit 1775
Invention: ANTI-REFLECTIVE GLASS SURFACE WITH IMPROVED CLEANABILITY			
<p style="text-align: center;"><u>TO THE COMMISSIONER OF PATENTS:</u></p> <p>Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed: <u>December 9, 2003</u>.</p> <p>The fee for filing this Appeal Brief is <u>330.00</u>.</p> <p><input checked="" type="checkbox"/> Large Entity <input type="checkbox"/> Small Entity</p> <p><input checked="" type="checkbox"/> A check in the amount of <u>330.00</u> is enclosed.</p> <p><input type="checkbox"/> Charge the amount of the fee to Deposit Account No. _____ This sheet is submitted in duplicate.</p> <p><input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> <p><input checked="" type="checkbox"/> The Director is hereby authorized to charge any additional fees that may be required or credit any overpayment to Deposit Account No. <u>04-0100</u>. This sheet is submitted in duplicate.</p> <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"><div style="width: 60%;"> _____ Louis J. DeLuca Attorney Reg. No. : 47,522 DARBY & DARBY P.C. P.O. Box 5257 New York, New York 10150-5257 (212) 527-7791</div><div style="width: 35%; text-align: right;"><p>Dated: <u>July 9, 2004</u></p></div></div>			